

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-006960**Date Inspected:** 27-May-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** Mike Gregson, Rob Walters**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Hinge K Pipe Beams**Summary of Items Observed:**

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3

Hinge-K Pipe Beam Assembly 102A-1: 5/27/09

a111-1 Forging to a110-1 Base Plate

QA Inspector noticed this assembly 102A-1 was currently sitting idle, with a pending critical weld repair on weld joint #W2-12/W2-13.

Hinge-K Pipe Beam Assembly 102A-2: 5/27/09

a111-2 Forging to a110-2 Base Plate

QA Inspector noticed this assembly 102A-2 was sitting idle, with a pending non-critical weld repair.

Hinge-K Pipe Beam Assembly 102A-3: 5/27/09

a111-3 Forging to a110-3 Base Plate

QA Inspector noticed this assembly 102A-3 was sitting idle, with a pending non-critical weld repair.

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Hinge-K Pipe Beam Assembly 102A-4: 5/27/09

a111-4 Forging to a110-4 Base Plate

QA Inspector spoke with QC Inspector Rob Walters and Mr. Rob Walters explained that 100% magnetic particle testing was performed on the PJP and fillet welds for the plate stiffeners, designated as a107 and b106, to the base plate a110, for forging assembly 102A-4. Mr. Rob Walters explained that these weld joint numbers were designated as WJ #'S W2-03, W2-04, W2-05, W2-14, W2-15 and W2-16. QA Inspector reviewed the applicable magnetic testing report and noted that Mr. Rob Walters had found no rejectable indications and appeared to be in compliance with AWS D1.5 and contract requirements. QA Inspector performed approximately 10% magnetic particle testing on the PJP and fillet welds for the plate stiffeners, designated as a107 and b106, to the base plate a110, for forging assembly 102A-4. QA Inspector found no rejectable indications and completed the applicable magnetic testing report. See TL6028, on this date, for additional details.

Hinge-K Pipe Beam Fuse Assembly 120A-1: 5/27/09

a124-6 Half Fuse to a124-7 Half Fuse

QA Inspector noticed this fuse assembly 120A-1 was sitting idle in OIW Bay 6, pending the stainless steel overlay process.

Hinge-K Pipe Beam Fuse Assembly 120A-2: 5/27/09

a124-3 Half Fuse to a124-11 Half Fuse

QA Inspector noticed this fuse assembly 120A-2 was sitting idle, with a pending third time critical weld repair.

Hinge-K Pipe Beam Fuse Assembly 120A-3: 5/27/09

a124-12 Half Fuse to a124-10 Half Fuse

QA Inspector noticed this fuse assembly 120A-3 was previously transferred to OIW Bay 6 and was sitting idle, pending the stainless steel overlay process.

Hinge-K Pipe Beam Fuse Assembly 120A-4: 5/28/09

a124-13 Half Fuse to a124-4 Half Fuse

QA Inspector spoke with A&G and A&G explained that the second cut pass of approximately .160' (4mm) was in progress and the third and final cut pass would probably start on 5/28/09, with a completion date of 5/29/09.

Hinge-K Pipe Beam Fuse Assembly 120A-5: 5/27/09

a124-14 Half Fuse to a124-2 Half Fuse

QA Inspector noticed that welder # T6, Mr. Craig Jacobsen had previously completed the submerged arc welding on the a124-14 half fuse to a124-2 half fuse, CJP weld splice, designated as weld joint #WM3-18. QA Inspector noticed QC Inspector Rob Walters had performed 100% preliminary ultrasonic weld inspection on the a124-14 half fuse to a124-2 half fuse, CJP weld splice, designated as weld joint #WM3-18. QA Inspector reviewed the applicable ultrasonic testing report and noticed that Mr. Rob Walters had performed the ultrasonic weld inspection on face A/face B and had utilized a 60/70 transducer angle. QA Inspector noted that Mr. Rob Walters had performed the ultrasonic weld inspection after 72hrs. cooling time and had found no rejectable indications. QA Inspector noted that Mr. Rob Walters appeared to be in compliance with AWS D1.5 and contract requirements. QA Inspector performed approximately 10% preliminary ultrasonic weld inspection on the a124-14 half fuse to a124-2 half fuse, CJP weld splice, designated as weld joint #WM3-18 and found no rejectable indications. QA Inspector performed the ultrasonic weld inspection on face A/face B and had utilized a 60/70 transducer angle, in

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accordance with AWS D1.5. QA Inspector notified QC Lead Inspector Mike Gregson of the ultrasonic testing results and completed the applicable ultrasonic testing report. See TL6027, ultrasonic testing report, on this date for additional details.

Hinge-K Pipe Beam Sub-Assembly a124-1: 5/27/09

a125 & b125 Ring Stiffeners to a124-1 Half Fuse

QA Inspector randomly witnessed OIW welder #O6, Mr. Tim O'Brian, performing submerged arc welding on the a125 internal ring stiffener to a124-1 half fuse, designated as weld joint #WM3-13

QA Inspector noticed the submerged arc welding was being performed in the flat position and verified Mr. Tim O'Brian was currently qualified for this welding process/position and randomly recorded pre-heat temperatures of approximately 350 F, which is in accordance with the applicable welding procedure specification (WPS 4020). QA Inspector noticed that QC Inspector Rob Walters was present to randomly verify in-process welding parameters (amps/volts) and pre-heat temperatures. QA Inspector noted that the submerged arc welding being performed by Mr. Tim O'Brian, appeared to be in compliance with the applicable welding procedure specification (WPS 4020).

Hinge-K Pipe Beam Sub-Assembly a124-5: 5/27/09

a125 & b125 Ring Stiffeners to a124-1 Half Fuse

QA Inspector noticed this sub-assembly a124-5 had been previously transferred from the OIW storage yard to OIW Bay 3, in preparation for the submerged arc welding on the internal ring stiffeners, a125 & b125. QA Inspector noticed that welder # H49, Mr. Rick Hinkle was grinding to clean sound metal, on the interior of sub-assembly a125-5, in preparation for the submerged arc welding.

Hinge-K Pipe Beam Sub-Assembly a124-9: 5/27/09

a125 & b125 Ring Stiffeners to a124-9 Half Fuse

QA Inspector noticed the submerged arc welding was complete on the internal ring stiffeners and this assembly a124-9 was sitting idle.

OIW South Storage Yard: 5/27/09

QA Inspector noticed the following half-fuse sub assemblies were sitting idle, pending submerged arc welding on the internal stiffener rings, piece marks identified as a125 & b125: a124-8, a124-15 and a124-16.

Material, Equipment, and Labor Tracking

QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 6 OIW production personnel and 2 QC Inspectors. The following were present at A&G Machining: 1 A&G supervisor and 1 A&G machinist using a horizontal lathe.

### Summary of Conversations:

As noted above.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

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**Inspected By:** Vance,Sean

Quality Assurance Inspector

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**Reviewed By:** Adame,Joe

QA Reviewer